CHAPTER 5

WATER QUALITY PARTNERSHIPS IN THE TENNESSEE WESTERN VALLEY (KY LAKE) WATERSHED

5.1. BACKGROUND. The Watershed Approach relies on participation at the federal, state, local and nongovernmental levels to be successful. Two types of partnerships are critical to ensure success:

- Partnerships between agencies
- Partnerships between agencies and landowners

This chapter describes both types of partnerships in the Tennessee portion of the Tennessee Western Valley (KY Lake) Watershed. The information presented is provided by the agencies and organizations described.

5.2. FEDERAL PARTNERSHIPS.

5.2.A. Natural Resources Conservation Service. The Natural Resources Conservation Service (NRCS), an agency of the U.S. Department of Agriculture, provides technical assistance, information, and advice to citizens in their efforts to conserve soil, water, plant, animal, and air resources on private lands.

Performance Results System (PRS) is a Web-based database application providing USDA Natural Resources Conservation Service, conservation partners, and the public fast and easy access to accomplishments and progress toward strategies and performance. The PRS may be viewed at http://prms.nrcs.usda.gov/prs. From the opening menu, select "Reports" in the top tool bar. Next, select "2004 Reports" if it's active, and "2003 PRMS Reports" if it's not. Pick the conservation treatment of interest on the page that comes up and reset the date to 2004 Reports if it is not set there. Pick the conservation practice of interest. In the location drop box of the page that comes up, select "Tennessee" and click on the "Refresh" button. In the "By" drop box that comes up, select "Hydrologic Unit" and click on the "Refresh" button. The report of interest can now be viewed.

The data can be used to determine broad distribution trends in service provided to customers by NRCS conservation partnerships. These data do not show sufficient detail to enable evaluation of site-specific conditions (e.g., privately-owned farms and ranches) and are intended to reflect general trends.

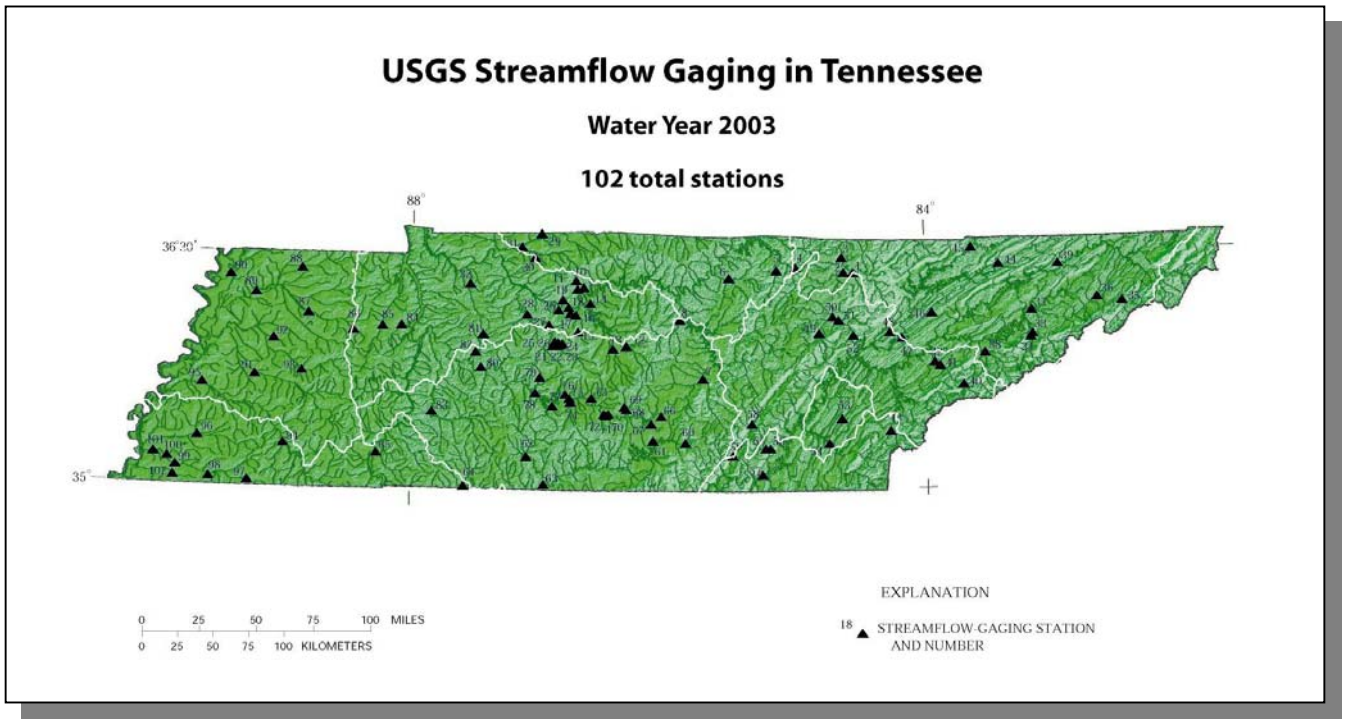
CONSERVATION PRACTICE	TOTAL		
	FEET	ACRES	NUMBER
Comprehensive Nutrient Management Plans		4,539	
Streambank and Shoreline Protection	1,880		
Water Supply	7,990		310
Water Detention/Retention			78
Pest Management		4,182	
Land Treatment: Buffers	1,880	72	
Land Treatment: Surface Water Management	1,200	1	
Grazing/Forages Practices	92,271	3,734	

Table 5-1. Landowner Conservation Practices in Partnership with NRCS in the Tennessee Portion of the Tennessee Western Valley (KY Lake) Watershed. *Data are from PRMS for October 1, 2003 through September 30, 2004 reporting period. More information is provided in Appendix V.*

5.2.B. United States Geological Survey Water Resources Programs – Tennessee District The U.S. Geological Survey (USGS) provides relevant and objective scientific studies and information for public use to evaluate the quantity, quality, and use of the Nation's water resources. In addition to providing National assessments, the USGS also conducts hydrologic studies in cooperation with numerous Federal, State, and local agencies to address issues of National, regional, and local concern. Please visit http://water.usgs.gov/ for an overview of the USGS, Water Resources Discipline.

The USGS collects hydrologic data to document current conditions and provide a basis for understanding hydrologic systems and solving hydrologic problems. In Tennessee, the USGS records streamflow continuously at more than 102 gaging stations equipped with recorders and makes instantaneous measurements of streamflow at many other locations. Ground-water levels are monitored Statewide, and the physical, chemical, and biologic characteristics of surface and ground waters are analyzed. USGS activities also include the annual compilation of water-use records and collection of data for National baseline and water-quality networks. National programs conducted by the USGS include the National Atmospheric Deposition Program (http://bqs.usgs.gov/acidrain/), National Stream Quality Accounting Network (http://water.usgs.gov/nasqan/), and the National Water-Quality Assessment Program (http://water.usgs.gov/nawqa/). For specific information on the Upper and Lower Tennessee NAWQA studies, please visit http://tn.water.usgs.gov/lten/tenn.html

USGS Water Resources Information on the Internet. Real-time and historical streamflow, water levels, and water-quality data at sites operated by the Tennessee District can be accessed at http://waterdata.usgs.gov/tn/nwis/nwis. Data can be retrieved by county, hydrologic unit code, or major river basin using drop-down menus. Contact Donna Flohr at (615) 837-4730 or dfflohr@usgs.gov for specific information about streamflow data. Recent publications by the USGS staff in Tennessee can be accessed by visiting http://tn.water.usgs.gov/pubpg.html. This web page provides searchable bibliographic information to locate reports and other products about specific areas.



5.2.C. U.S. Fish and Wildlife Service. The mission of the U.S. Fish and Wildlife Service is working with others to conserve, protect, and enhance fish, wildlife, and plants and their habitats for the continuing benefit of the American people. Sustaining our nation's fish and wildlife resources is a task that can be accomplished only through the combined efforts of governments, businesses, and private citizens. The U.S. Fish and Wildlife Service (Service) works with State and Federal agencies and Tribal governments, helps corporate and private landowners conserve habitat, and cooperates with other nations to halt illegal wildlife trade. The Service also administers a Federal Aid program that distributes funds annually to States for fish and wildlife restoration, boating access, hunter education, and related projects across America. The funds come from Federal excise taxes on fishing, hunting, and boating equipment.

Endangered Species Program

Through the Endangered Species Program, the Service consults with other federal agencies concerning their program activities and their effects on endangered and threatened species. Other Service activities under the Endangered Species Program include the listing of rare species under the Endangered Species Act (ESA) of 1973 (87 Stat. 884, as amended: 16 U.S.C. 1531 et seq.) and the recovery of listed species. Once listed, a species is afforded the full range of protections available under the ESA, including prohibitions on killing, harming or otherwise taking a species. In some instances, species listing can be avoided by the development of Candidate Conservation Agreements, which may remove threats facing the candidate species, and funding efforts such as the Private Stewardship Grant Program. Federally endangered and threatened species in this portion of the Tennessee River watershed include the gray bat (*Myotis grisescens*), bald eagle (*Haliaeetus leucocephalus*), and pink mucket (*Lampsilis abrupta*). For a complete listing of endangered and threatened species in Tennessee, please visit the Service's website at http://www.fws.gov/cookeville/.

Recovery is the process by which the decline of an endangered or threatened species is stopped and reversed, and threats to the species' survival are eliminated, so that long-term survival in nature can be ensured. The goal of the recovery process is to restore listed species to a point where they are secure and self-sustaining in the wild and can be removed from the endangered species list. Under the ESA, the Service and National Marine Fisheries Service were delegated the responsibility of carrying out the recovery program for all listed species.

In a partnership with the Tennessee Nature Conservancy (TNC), Tennessee Wildlife Resources Agency (TWRA), and Tennessee Department of Environment and Conservation (TDEC) Division of Natural Heritage, the Service developed a State Conservation Agreement for Cave Dependent Species in Tennessee (SCA). The SCA targets unlisted but rare species and protects these species through a suite of proactive conservation agreements. The goal is to preclude the need to list these species under the ESA. This agreement covers middle and eastern Tennessee and will benefit water quality in many watersheds within the State.

In an effort to preclude the listing of a rare species, the Service engages in proactive conservation efforts for unlisted species. The program covers not only formal candidates

but other rare species that are under threat. Early intervention preserves management options and minimizes the cost of recovery.

Partners for Fish and Wildlife Program

The U.S. Fish and Wildlife Service established the Partners for Fish and Wildlife Program to restore historic habitat types that benefit native fishes and wildlife. The program adheres to the concept that restoring or enhancing habitats such as wetlands or other unique habitat types will substantially benefit federal trust species on private lands by providing food and cover or other essential needs. Federal trust species include threatened and endangered species, as well as migratory birds (e.g. waterfowl, wading birds, shorebirds, neotropical migratory songbirds).

Participation is voluntary and various types of projects are available. Projects include livestock exclusion fencing, alternate water supply construction, streambank stabilization, restoration of native vegetation, wetland restoration/enhancement, riparian zone reforestation, and restoration of in-stream aquatic habitats.

HOW TO PARTICIPATE

- Interested landowners contact a Partners for Fish and Wildlife Biologist to discuss the proposed project and establish a site visit.
- A visit to the site is then used to determine which activities the landowner desires and how those activities will enhance habitat for trust resources. Technical advice on proposed activities is provided by the Service, as appropriate.
- Proposed cost estimates are discussed by the Service and landowner.
- A detailed proposal which describes the proposed activities is developed by the Service biologist and the landowner. Funds are competitive, therefore the proposal is submitted to the Service's Ecosystem team for ranking and then to the Regional Office for funding.
- After funding is approved, the landowner and the Service co-sign a Wildlife Extension Agreement (minimum 10-year duration).
- Project installation begins.
- When the project is completed, the Service reimburses the landowner after receipts and other documentation are submitted according to the Wildlife Extension Agreement.

For more information regarding the Endangered Species and Partners for Fish and Wildlife programs, please contact the Tennessee Ecological Services Field Office at (931)-528-6481 or visit their website at http://www.fws.gov/cookeville/.

5.2.D. Tennessee Valley Authority (TVA). The Tennessee Valley Authority's (TVA) goals for the 21st Century are to generate prosperity for the Tennessee Valley by promoting economic development, supplying low-cost, reliable power, and supporting a thriving river system. TVA is committed to the sustainable development of the region and is engaged in a wide range of watershed protection activities. TVA has seven multidisciplinary Watershed Teams to help communities across the Tennessee Valley

actively develop and implement protection and restoration activities in their local watersheds. These teams work in partnership with business, industry, government agencies, and community groups to manage, protect, and improve the quality of the Tennessee River and its tributaries. TVA also operates a comprehensive monitoring program to provide real-time information to the Watershed Teams and other entities about the conditions of these resources.

Further information on TVA's activities in the Tennessee Western valley (KY Lake) Watershed can be obtained by writing the Kentucky Watershed Team at 202 West Blythe St., Paris, TN 38242 or by calling (731)-641-2000.

5.3. STATE PARTNERSHIPS.

5.3.A. TDEC Division of Water Supply. The Source Water Protection Program, authorized by the 1996 Amendments to the Safe Drinking Water Act, outline a comprehensive plan to achieve maximum public health protection. According to the plan, it is essential that every community take these six steps:

1) Delineate the drinking water source protection area
2) Inventory known and potential sources of contamination within these areas
3) Determine the susceptibility of the water supply system to these contaminants
4) Notify and involve the public about threats identified in the contaminant source inventory and what they mean to their public water system
5) Implement management measures to prevent, reduce or eliminate threats
6) Develop contingency planning strategies to deal with water supply contamination or service interruption emergencies (including natural disaster or terrorist activities).

Source water protection has a simple objective: to prevent the pollution of the lakes, rivers, streams, and ground water (wells and springs) that serve as sources of drinking water before they become contaminated. This objective requires locating and addressing potential sources of contamination to these water supplies. There is a growing recognition that effective drinking water system management includes addressing the quality and protection of the water sources.

Source Water Protection has a significant link with the Watershed Management Program goals, objectives and management strategies. Watershed Management looks at the health of the watershed as a whole in areas of discharge permitting, monitoring and protection. That same protection is important to protecting drinking water as well. Communication and coordination with a multitude of agencies is the most critical factor in the success of both Watershed Management and Source Water Protection.

Watershed management plays a role in the protection of both ground water and surface water systems. Watershed Management is particularly important in areas with karst (limestone characterized by solution features such as caves and sinkholes as well as disappearing streams and spring), since the differentiation between ground water and surface water is sometimes nearly impossible. What is surface water can become ground water in the distance of a few feet and vice versa.

Source water protection is not a new concept, but an expansion of existing wellhead protection measures for public water systems relying on ground water to now include surface water. This approach became a national priority, backed by federal funding, when the Safe Drinking Water Act amendments (SDWA) of 1996 were enacted. Under this Act, every public drinking water system in the country is scheduled to receive an assessment of both the sources of potential contamination to its water source of the threat these sources may pose by the year 2003 (extensions were available until 2004). The assessments are intended to enhance the protection of drinking water supplies within existing programs at the federal, state and local levels. Source water

assessments were mandated and funded by Congress. Source water protection will be left up to the individual states and local governments without additional authority from Congress for that progression.

As a part of the Source Water Assessment Program, public water systems are evaluated for their susceptibility to contamination. These individual source water assessments with susceptibility analyses are available to the public at http://www.state.tn.us/environment/dws as well as other information regarding the Source Water Assessment Program and public water systems.

For further discussion on ground water issues in Tennessee, the reader is referred to the Ground Water Section of the 305(b) Water Quality Report at:

http://www.state.tn.us/environment/water.htm.

The intent of this report is to provide the public with an overall characterization of ground water quality and hydrogeology for Tennessee.

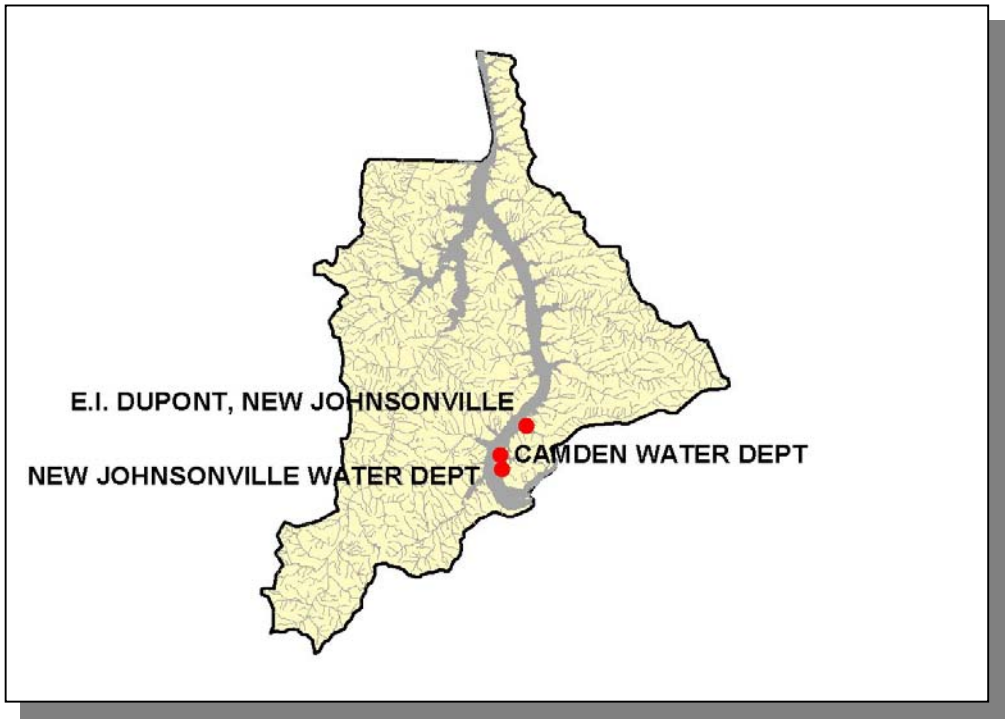


Figure 5-1. Locations of Community and Non-Community Public Water Supply Intakes in the Buffalo River Watershed.

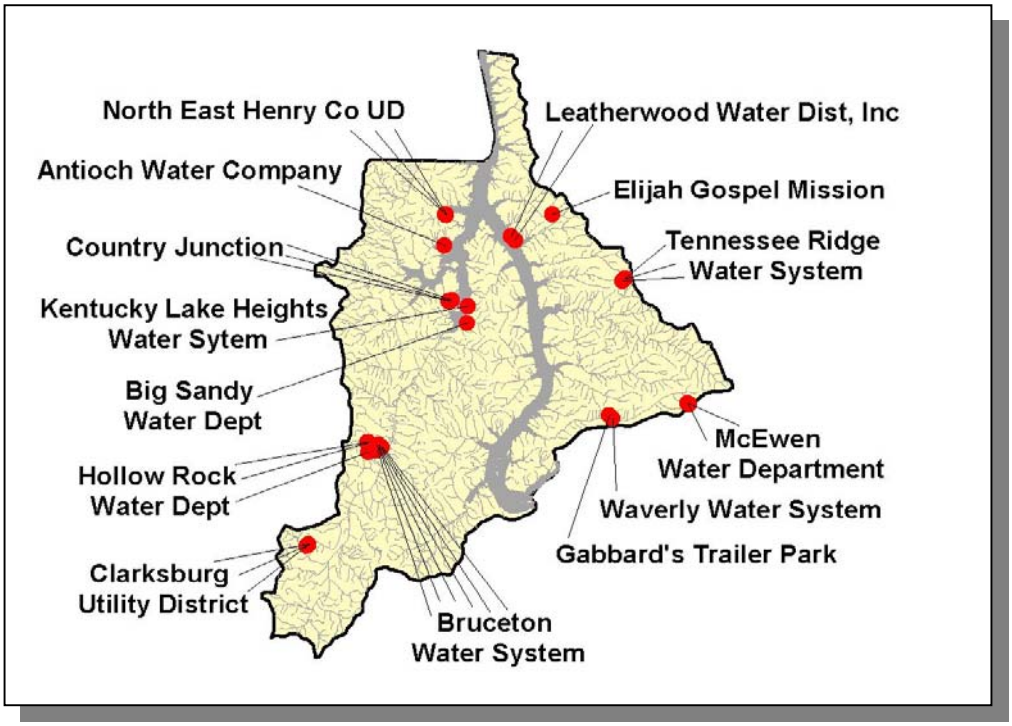


Figure 5-2. Locations of Community and Public Groundwater Supply Intakes in the Tennessee Portion of the Tennessee Western Valley (Kentucky Lake) Watershed.

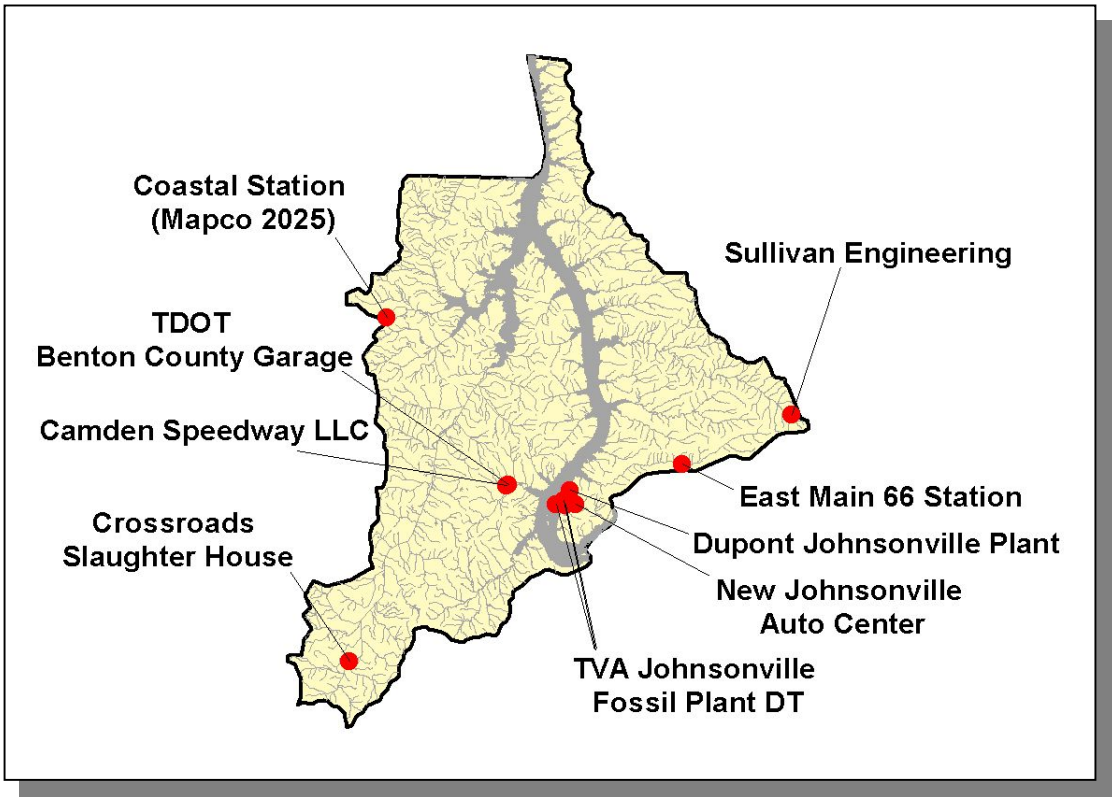


Figure 5-3. Locations of UIC (Underground Injection Control) Sites in the Tennessee Portion of the Tennessee Western Valley (KY Lake) Watershed. *Injection wells include stormwater sinkholes modified for drainage, commercial/industrial septic tanks, and large capacity septic tanks.*

5.3.B. TDEC Division of Community Assistance. The Division of Community Assistance administers the state's Clean Water State Revolving Fund Program. Amendment of the Federal Clean Water Act in 1987 created the Clean Water State Revolving Fund (SRF) Program to provide low-interest loans to cities, counties, and utility districts for the planning, design, and construction of wastewater facilities. The U.S. Environmental Protection Agency awards annual capitalization grants to fund the program and the State of Tennessee provides a twenty-percent funding match. The Division of Community Assistance has awarded loans totaling approximately $675 million since the creation of the SRF Program. SRF loan repayments are returned to the program and used to fund future SRF loans.

SRF loans are available for planning, design, and construction of wastewater facilities, or any combination thereof. Eligible projects include new construction or upgrading/expansion of existing facilities, including wastewater treatment plants, pump stations, force mains, collector sewers, interceptors, elimination of combined sewer overflows, and nonpoint source pollution remedies.

SRF loan applicants must pledge security for loan repayment, agree to adjust user rates as needed to cover debt service and fund depreciation, and maintain financial records that follow governmental accounting standards. SRF loan interest rates range from zero percent to market rate, depending on the community's per-capita income, taxable sales, and taxable property values. Most SRF loan recipients qualify for interest rates between 2 and 4 percent. Interest rates are fixed for the life of the term of the loan. The maximum loan term is 20 years or the design life of the proposed wastewater facility, whichever is shorter.

The Division of Community Assistance maintains a Priority Ranking System and Priority List for funding the planning, design, and construction of wastewater facilities. The Priority Ranking List forms the basis for funding eligibility determinations and allocation of Clean Water SRF loans. Each project's priority rank is generated from specific priority ranking criteria and the proposed project is then placed on the Project Priority List. Only projects identified on the Project Priority List may be eligible for SRF loans. The process of being placed on the Project Priority List must be initiated by a written request from the potential SRF loan recipient or their engineering consultant. SRF loans are awarded to the highest priority projects that have met SRF technical, financial, and administrative requirements and are ready to proceed.

Since SRF loans include federal funds, each project requires development of a Facilities Plan, an environmental review, opportunities for minority and women business participation, a State-approved sewer use ordinance and Plan of Operation, and interim construction inspections.

For further information about Tennessee's Clean Water SRF Loan Program, contact the Division of Community Assistance by telephone at (615) 532-0445 or visit their Web site at http://www.state.tn.us/environment/dca.

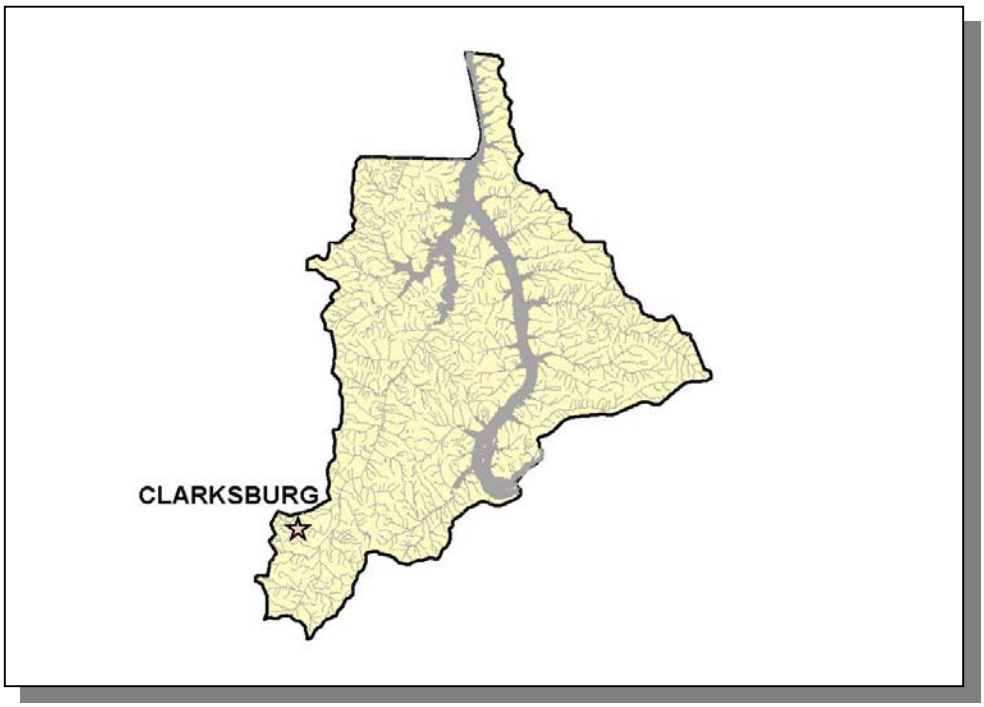


Figure 5-4. Location of Communities Receiving SRF Loans or Grants in the Tennessee Portion of the Tennessee Western Valley (KY Lake) Watershed. *More information is provided in Appendix V.*

5.3.C. Tennessee Department of Agriculture. The Tennessee Department of Agriculture's Water Resources Section consists of the federal Section 319 Nonpoint Source Program and the Agricultural Resources Conservation Fund Program. Both of these are grant programs which award funds to various agencies, non-profit organizations, and universities that undertake projects to improve the quality of Tennessee's waters and/or educate citizens about the many problems and solutions to water pollution. Both programs fund projects associated with what is commonly known as "nonpoint source pollution."

The Tennessee Department of Agriculture's Nonpoint Source Program (TDA-NPS) has the responsibility for management of the federal Nonpoint Source Program, funded by the US Environmental Protection Agency through the authority of Section 319 of the Clean Water Act. This program was created in 1987 as part of the reauthorization of the Clean Water Act, and it established funding for states, territories and Indian tribes to address NPS pollution. Nonpoint source funding is used for installing Best Management Practices (BMPs) to stop known sources of NPS pollution, training, education, demonstrations and water quality monitoring. The TDA-NPS Program is a non-regulatory program, promoting voluntary, incentive-based solutions to NPS problems. The TDA-NPS Program basically funds three types of programs:

- BMP Implementation Projects. These projects aid in the improvement of an impaired waterbody, or prevent a non-impaired water from becoming listed on the 303(d) List.

- Monitoring Projects. Up to 20% of the available grant funds are used to assist the water quality monitoring efforts in Tennessee streams, both in the state's 5-year watershed monitoring program, and also in performing before-and-after BMP installation, so that water quality improvements can be verified. Some monitoring in the Tennessee Western Valley (KY Lake) Watershed was funded under an agreement with the Tennessee Department of Agriculture, Nonpoint Source Program (U.S. Environmental Protection Agency Assistance Agreements C9994674-00-0, C9994674-01-0, and C9994674-02-0).

- Educational Projects. The intent of educational projects funded through TDA-NPS is to raise the awareness of landowners and other citizens about practical actions that can be taken to eliminate nonpoint sources of pollution to the waters of Tennessee.

The Tennessee Department of Agriculture Agricultural Resources Conservation Fund Program (TDA-ARCF) provides cost-share assistance to landowners across Tennessee to install BMPs that eliminate agricultural nonpoint source pollution. This assistance is provided through Soil Conservation Districts, Resource Conservation and Development Districts, Watershed Districts, universities, and other groups. Additionally, a portion of the TDA-ARCF is used to implement information and education projects statewide, with the focus on landowners, producers, and managers of Tennessee farms and forests.

Participating contractors in the program are encouraged to develop a watershed emphasis for their individual areas of responsibility, focusing on waters listed on the Tennessee 303(d) List as being impaired by agriculture. Current guidelines for the TDA-ARCF are available. Landowners can receive up to 75% of the cost of the BMP as a reimbursement.

Since January of 1999, the Department of Agriculture and the Department of Environment and Conservation have had a Memorandum of Agreement whereby complaints received by TDEC concerning agriculture or silviculture projects would be forwarded to TDA for investigation and possible correction. Should TDA be unable to obtain correction, they would assist TDEC in the enforcement against the violator. More information forestry BMPs is available at:
http://tennessee.gov/agriculture/forestry/BMPs.pdf, and the complaint form is available at: http://tennessee.gov/environment/wpc/logform.php.

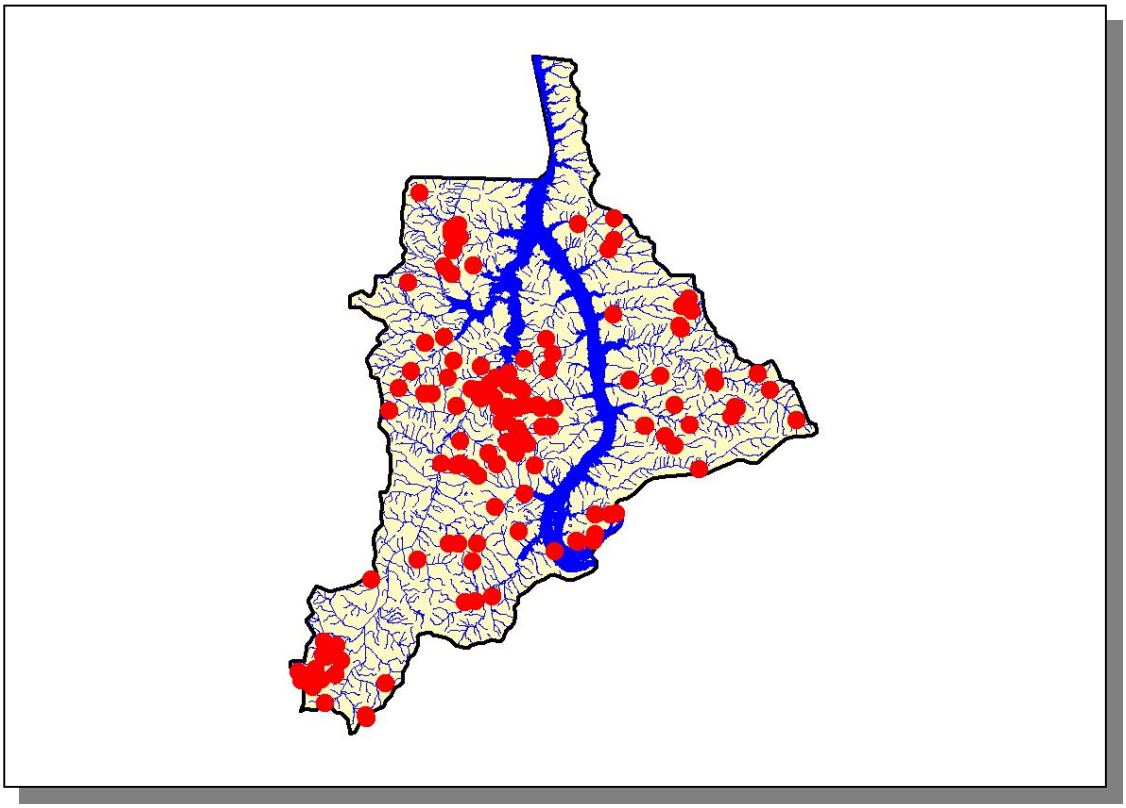


Figure 5-5. Location of BMPs installed from 1999 through 2003 in the Tennessee Portion of the Tennessee Western Valley (KY Lake) Watershed with Financial Assistance from the Tennessee Department of Agriculture's Nonpoint Source and Agricultural Resources Conservation Fund Grant Programs. *More information is provided in Appendix V.*

5.3.D. Kentucky Division of Water. The Kentucky Watershed Management Framework is a dynamic, flexible structure for coordinating watershed management across the Commonwealth of Kentucky. The Watershed Management Framework is not a new program, but rather a way of coordinating existing programs and building new partnerships that will result in more effective and efficient management of the state's land and water resources. Inherent in the design of the Framework is the belief that many stakeholder groups and individuals must have ongoing opportunities to participate in the process of managing the abundant natural resources that characterize Kentucky's watersheds.

Benefits to the people of Kentucky include:

- Better information for decision making
- Increased ability to resolve complex water resources problems
- Improved coordination among government agencies
- More opportunities for citizens to get involved
- Increased ability to demonstrate results and benefits of environmental management
- More cost effective use of public and private funds

Each major river basin in Kentucky is staffed with a Basin Coordinator. Basin Coordinators are staff assigned to serve as a liaison in a given basin management unit among the agencies, the local interests, and the resources concerns. Their job is to specialize in their watershed, to know what resources might be available to address the concerns, and facilitate the watershed process to implement plans that address the problems.

For more information about the KY Watershed Management Framework visit our website at http://www.watersheds.ky.gov/

Watershed Framework activities in the Tennessee Western Valley (KY Lake) Watershed are coordinated through the Four Rivers Basin Team. The Four River Basin Team is a multi-agency task force that meets regularly to help in development of monitoring strategies, education and outreach, prioritization of issues and watersheds within the basin, planning, and networking among technical staff and local leaders to apply agency resources to implement fixes. For more info about the Four Rivers Basin Team contact:

Bob Wise
Four Rivers Basin Coordinator
(270)-554-1022
robert.wise@jpf.org.

The web address is http://www.watersheds.ky.gov/basins/four_rivers/

No HUC 11 watersheds draining to KY Lake were identified as a priority watershed for planning in the first cycle. However there are some projects under way in the HUC 8 watershed. A $330,000 319(h) funded project at the Pirates Cove lakeside community

has been underway for some time. The need for the project was identified based on data that showed bacteria contamination in the Jonathan Creek embayment on KY Lake. The project will implement a community wastewater treatment system to address the problem. This will hopefully be completed over the next year or so.

The Four Rivers Watershed Watch, in conjunction with Murray State University, has conducted monitoring on some of the KY Lake embayments. Data are available at http://kywater.org/watch/fourrivers/

There are also a number of programs such as the Clean Marina Program and the Clean Boating Program that the Four Rivers Basin Team cosponsors with other partners.

Tennessee River, above Yellow Spring Branch (06040005270)

Geography. This hydrologic unit represents the Tennessee River from the Tennessee state line downstream to the mouth of the Blood River. The eastern side of this watershed is part of the Land Between the Lakes National Recreation Area in Tennessee and is not discussed in this report. The terrain of the watershed is typical of the transitional region between the Pennyroyal and Jackson Purchase known as "the breaks". The landscape is rugged with narrow valleys rising quickly to narrow ridges. Elevations vary 75-150 feet between valleys and ridge tops.

Waterways. This hydrologic unit drains about 30 square miles and contains about 70 total stream/lake miles. Tributaries in Kentucky include Cypress Creek and Yellow Spring Branch. Kentucky Lake inundates this entire segment of the Tennessee River. There are no KPDES permits recorded for this hydrologic unit.

Land cover/land use. Most of this watershed is covered with deciduous forest. Much of the shoreline is part of the Kentucky Lake Wildlife Management Area. A few areas along ridges on the western watershed perimeter are used for agriculture. There are numerous residential areas around Kentucky Lake, especially at Hamlin and Fort Heiman.

Agency Data Assessment. Not currently assessed.

Watershed Rankings. The data-driven ranking process for the 4 Rivers region indicated the watershed as an overall low priority.

Blood River (06040005290)

Geography. The Blood River arises in Henry County, Tennessee and flows generally northward into Calloway County where it joins the Tennessee River at Kentucky Lake. The terrain of the watershed is typical of the transitional region between the Pennyroyal and Jackson Purchase known as "the breaks". The landscape is rugged with relatively wide valleys that rise sharply to narrow ridges. Elevations vary 75-175 feet between valleys and ridge tops.

Waterways This watershed drains about 90 square miles and contains about 250 total stream miles. Tributaries include McCullough Fork, Lax Creek, Dog Creek, Panther Creek, Wildcat Creek, Sugar Creek, Little Sugar Creek, Grindstone Creek, Tan Branch and Beechy Creek. Kentucky Lake inundates the lower portion of the Blood River. There are no KPDES permits recorded for this watershed.

Land cover/land use. Much of the land around Kentucky Lake is covered with deciduous forest. There are large wetland areas around the lower section of the Blood River as well as the lower reaches of many of the tributaries. A large portion of the lower reach of the Blood River and Beechy Creek are part of the Kentucky Lake and Beechy Creek Wildlife Management Areas. Agriculture production occurs along the ridge tops on the western side of the watershed and in some of the wider valleys. An active state Superfund site is located in the watershed. Residential developments are located around the Blood River embayment. A small gravel mine is located in the watershed.

Agency Data Assessment. During the 2000 water quality assessment the main stem of the Blood River was assessed from the backwaters of Kentucky Lake upstream to the Tennessee state line. This 7.4-mile segment was assessed for fish, macroinvertebrates and algae. The segment was judged fully supporting for aquatic life.

- The tributaries of Beechy Creek, Panther Creek, Sugar Creek and Wildcat Creek were also assessed and judged fully supporting for aquatic life.

Watershed Rankings. The data-driven ranking process for the 4 Rivers region indicated the watershed as an overall low priority.

<u>Tennessee River, at Jonathan Creek (06040005310)</u>

Geography. This hydrologic unit represents the Tennessee River from the mouth of the Blood River downstream to a small tributary just below Kentucky Dam. Most of the eastern side of this watershed is part of the Land Between the Lakes National Recreation Area. The Tennessee Valley Divide runs north to south down the middle of the Land Between the Lakes and forms the watershed boundary between the Cumberland River at Lake Barkley and the Tennessee River at Kentucky Lake. The terrain of the watershed is typical of the transitional region between the Pennyroyal and Jackson Purchase known as “the breaks”. The landscape is rugged with narrow valleys that rise sharply to narrow ridges. Elevations vary 75-150 feet between valleys and ridge tops.

Waterways. This hydrologic unit drains over 240 square miles and contains about 575 total stream/lake miles. Tributaries include Snipe Creek, Anderson Creek, Cool Creek, Jonathan Creek, Bear Creek, Little Bear Creek, Pisgah Creek, Smith Creek, Duncan Creek, Higgins Branch, Rhodes Creek, Blockhouse Creek, Golson Creek and Rhodes Creek. Kentucky Lake inundates this segment of the Tennessee River upstream of Kentucky Dam. There are 24 active KPDES permits recorded for this hydrologic unit.

Land cover/land use. The Land Between the Lakes area on the eastern side of the watershed is almost completely covered with deciduous forest. On the western side forest areas remain around the perimeter of the lake. Some shoreline areas are part of

the Kentucky Lake Wildlife Management Area. Agricultural production of swine, poultry and row crops occurs along ridge tops around Jonathan Creek. Residential developments are common along the western shore of the lake. Commercial and industrial developments are located near the city of Grand Rivers. Numerous active state Superfund sites are located near Grand Rivers.

Agency Data Assessment. During the 2000 water quality assessment a 1.3-mile segment of the Tennessee River below Kentucky Dam was assessed for fish and was judged partially supporting.

- An 11.8-mile segment of Jonathan Creek was assessed for fish and macroinvertebrates. This segment was judged partially supporting for aquatic life.

- A 3.3-mile segment of Little Jonathan Creek was assessed for fish and macroinvertebrates. This segment was judged fully supporting for aquatic life.

- A 3.2-mile segment of Bear Creek above the Kentucky Lake backwaters was assessed for fecal coliform bacteria and was judged not supporting for primary contact recreation.

- The tributaries of Ledbetter Creek and Turkey Creek were assessed and judged fully supporting for aquatic life.

- A 1.7-mile segment of Clear Creek was assessed for macroinvertebrates, but the data was judged to be inconclusive for support of aquatic life.

Watershed Rankings. The data-driven ranking process for the 4 Rivers region indicated the watershed as an overall high priority due to a high need for restoration and a high concern from potential impacts. The main factor for restoration is observed impacts that indicate 16.3 miles of streams not fully supporting their designated uses. Potential impacts include a high population increase, a high number of permitted discharges, a high number of discharge violations, a high potential for erosion from agricultural activity and a high potential contaminants score.

For more info about the KY Watershed Initiative, or for more info about each basin, go to http://www.watersheds.ky.gov/Default.htm. At this site you can also link to a watershed viewer that offers narratives containing basic info such as land use, geography, permits, etc. for each HUC 11.

5.4. LOCAL INITIATIVES.

5.4.A. Five Rivers RC&D Council. The Mission of the Five Rivers RC&D Council is to promote activities that will enhance the quality of life, conserve natural resources, and promote economic development in the council area.

The Five Rivers RC & D Council covers seven counties in Middle Tennessee. Named for the 5 major rivers flowing through the area, the council serves Cheatham, Dickson, Houston, Humphreys, Montgomery, Robertson, and Stewart Counties. With the natural resources and community activities being diverse in geography, the Council responds to the needs of their local communities, both for conservation issues and for economic and rural development. The collaboration of its numerous partners makes the Five Rivers RC & D Council Area distinctive.

The Five Rivers RC & D Council assists in administering the Resource Conservation and Development Program, which is a unique combination of private enterprise and federal assistance that encourages economic growth through development, conservation and planned utilization of natural resources across the Council Area and Tennessee. Just a few services the RC&D program is providing in our community are Conservation Education, Farmland Protection, providing Technical Assistance, ensuring Community Services, establishing Sustainable Development, encouraging Natural Resources Protection, and Communicating Local Issues.

The Five Rivers RC&D Council participated in The National Clean Boating Campaign on the mighty Tennessee River at the Pebble Isle Marina near New Johnsonville in mid June. Sponsoring along with the Tennessee Valley Authority (TVA) Watershed Team and the WRJB Radio Station, the partnership program stressed the importance of clean water so boating and other recreational activities will continue to be fun and safe for future generations. The materials distributed throughout the day demonstrate how boaters can be good stewards of their water environment through best boating and marina practices. Other promotional items given to visiting boaters were tee shirts, hats, and whistles for the kids. The local residents were on notice from the advertisements for the event running for two weeks.

The sponsoring agencies were able to describe their role and niche in protecting the water resources in Middle Tennessee. The Five Rivers RC&D Council described some of their other projects and the mission of the Council. TVA listed several programs they are involved with across the Kentucky Lake watershed.

The Pebble Isle Marina was especially designated as a Clean Marina due to the pump out facility available for boats. The Marina owners are eager to expand their facility as well as protect the embankment where they are located. Establishing cost effective measures for businesses as well as private landowners is the focus of the collaboration of the Five Rivers RC & D Council and Tennessee Valley Authority.

For more information on the Five Rivers RC & D Council and its programs, contact Chandra Berry, RC & D Coordinator at (931) 368-0252 ext. 5 or visit the web site at: http://www.fiveriversrcd.org